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ABSTRACT

The general objective of this project is to enhance the educational and psycho-social development of seventh and eighth grade students who are experiencing learning or psycho-social deficits. This is accomplished through a meaningful tutorial relationship with a senior citizen aide. Together, the adolescent student and tutor create educational devices which the adolescent in turn uses to tutor elementary school pupils. A pre-post experimental design is used to evaluate the two specific objectives listed and their components: academic remediation (academic achievement, intellectual ability, written expression, and school grades) and psycho-social growth (internal external locus of control, self concept, classroom and home behavior, self rating of behavior, and adjustment). Findings indicate that program participants increase their academic knowledge and skills in that pupils are able to maintain and exceed the academic growth expected of normal students. As a group, pupils in the program grow from a functioning range indicative of low average intelligence to the average intelligence range. Participation in the program seems to have an effect on the students' personal development (as indicated by an increase in internal orientation to life) and by favorable changes on important attitudinal and behavioral dimensions indicative of positive mental health. (Author/AM)

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ED120295

P R O J E C T S. T. E. P.*

*SENIORS TUTOR FOR EDUCATIONAL PROGRESS

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ANNUAL EVALUATION REPORT

July 1974 - June 1975

Project 16-73-1022

Title III

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Annual Evaluation Report - 1975

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I. STATEMENT OF PROJECT OBJECTIVES AND EVALUATION TECHNIQUES USED

A. General Objectives

Connecticut legislation mandates that schools provide programs for all exceptional children. The needs of the adolescent are usually met with either self contained classes, a resource situation, an itinerant teacher or an outplacement to a special school. Providing remedial assistance to youngsters who are mainstreamed has the advantages of allowing the student to remain in his normal school setting and minimizing the stigma of being a "special student." This project attempts to take the best of each remedial situation. S.T.E.P. is a flexible self contained program within the mainstream. S.T.E.P. is designed so that participating students can attend regular class when remediation is not required. Besides minimizing the stigma of attending special remediation classes, it permits relationships with other students not only those who are learning or psycho-socially disabled. S.T.E.P. permits the student to remain in the mainstream of the educational and socialization process while providing the benefits of remedial services. Also, it allows the secondary school teacher, who has been trained to carry out a specific curriculum and is now accountable for the curriculum, to be relieved of the youngster who has learning problems or whose disruptive or withdrawn behavior frustrates the teacher and other pupils in a regular class. S.T.E.P. also provides support for the youngster with borderline problems who may otherwise remain in the class.

The general objective of S.T.E.P. is to enhance the educational and psycho-social development of 7th and 8th grade students who are experiencing learning or psycho-social deficits. This is accomplished through a meaningful tutorial relationship with a senior citizen aide. Together the adolescent student and tutor created "educational devices" which the adolescent in turn uses to tutor elementary school pupils. By engaging in a one-to-one tutorial relationship, creating devices and teaching younger pupils, it is assumed that the disabled students would fill the conceptual gaps in his own academic development. The tutors aimed to generate an accepting warm and meaningful atmosphere. Presumably, such an atmosphere would have positive effects on the student's psycho-social well-being. Of course the S.T.E.P. student, by teaching others, enhances his own psycho-social growth by developing pride and self-worth - traits, often lacking in such disabled students.

A pre-post experimental design was used to evaluate the specific objectives to be described below. Before and after participating in S.T.E.P., various academic and psychological measures were administered to evaluate gains made. In some cases, scores and grades from a control group were available to provide a base line for comparison.

B. Objective 1 - Academic Remediation

1. Academic Achievement:

The primary aim of S.T.E.P. was to enhance the academic skills of youngsters who have had difficulty learning in the traditional classroom setting. The S.T.E.P. student was expected to gain in academic competence after experiencing the S.T.E.P. program. The senior citizens focused on building the conceptual skills needed for functioning in the academic world, primarily through the construction of educational tools that required learning and using basic concepts. The devices where then utilized as vehicles to teach younger elementary students. The tutors also built academic skills through one-to-one tutoring in areas of academic weakness for the student.

Instrument:

The Stanford Achievement Test, a standardized academic achievement measure, was used to access the pupils' academic progress. Equivalent forms for each battery were used in the pre-post testing. Vocabulary and math applications were the two particular subject areas tested by the S.T.E.P. staff. As part of their regular school testing program, the S.A.T. is administered annually. The scores of the S.T.E.P. students from the April 1974 and April 1975 testings were compared with scores from a control group of youngsters who were not accepted into the S.T.E.P. program.

2. Intellectual Ability:

The S.T.E.P. tutors, besides attempting to increase the students' body of knowledge, also focused on building effective problem-solving strategy and cognitive abilities.

We predicted that the students general mental abilities and scholastic aptitude would improve after participating in S.T.E.P.

Instrument:

Otis - Lennon Mental Ability Test which measures the pupil's "facility in reasoning and in dealing abstractly with verbal, symbolic, and figural test content sampling a broad range of cognitive abilities" was used. The reader is reminded that the Otis-Lennon Test measures reasoning ability, not innate mental capacity. Thus, scores are susceptible to training that effects the ability to cope with academic tasks. Two parallel forms of the test, Form J and K were used in the pre-post testing.

3. Written Expression:

It was expected that the S.T.E.P. pupils would increase in their written expression.

Instrument:

The Myklebust Test was adapted as a pre and post test for assessing the changes in expressive writing of the population. This instrument tests such factors as productivity and concrete-abstract expression. Writing samples based on the Myklebust Picture Test were obtained from the children when they entered the program. Post testing consisted of the same procedure except that the children could choose between Slingerland Training pictures or the Myklebust Picture.

The productivity and syntax scores are objective scores based on manual instructions. The concrete-abstract section of the test is rather subjective. Therefore, each examiner graded the papers independently. Interrater reliability was .83.

4. School Grades:

We expected that any gains manifested on standardized achievement and aptitude tests would also be reflected in improved school grades. Teachers' grades during S.T.E.P. participation were gathered in English, Math, Social Studies and Science. These were compared with the grades received

by the control group during the same period of their academic career. Unfortunately, records before S.T.E.P. participation were unreliable and therefore no before and after comparisons could be made.

C. Objective 2 - Psycho-social Growth

1. Internal-External Locus of Control:

Involvement in S.T.E.P. was expected to increase the pupil's belief that he has some control over what will happen to him - i.e., achieving good grades and establishing friendships. Such events would not be seen as the result of luck, chance, fate or other unpredictable factors. S.T.E.P. reinforces the notion that students should assume responsibility for their destinies through their actions. The senior tutors stressed upon the students the consequences of their academic and social actions. For example, they reinforced the notion that by carefully studying and understanding the material, improved grades are possible. Similarly, by considering others' feelings, one's friends will reciprocate in kind. There is ample reason to believe that an internal locus of control significantly influences children's behavior - academically and socially. For instance, Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, and York (1966) in a study of almost one-half million youngsters across the United States, found that a belief in controlling one's destiny was a major determination in school achievement, and may have a stronger relationship to school achievement than all other school factors combined. The belief in an internal locus of control as measured by the Nowicki-Strickland Scale is associated with such psycho-social variables as delay of gratification, involvement in extra curricular activities and popularity, academic competence, social maturity and self-motivated behavior (Nowicki and Strickland 1973).

Instrument:

In this study the Nowicki-Strickland Locus of Control Scale for Children, a forty item pencil and paper measure, was used. Items, answerable yes or no, included: "Do you feel that when you do something wrong there is very little you can do to make it right?" (Yes). "Do you often feel that

whether you do your homework has much to do with what kind of grades you get?" (No). "Do you believe that whether or not people like you depends on how you act?" (No). "Are you the kind of person who believes that planning ahead makes things turn out better?" (Yes). Summarizing reliability findings in Nowicki and Strickland (1973), internal consistency for grades 6 - 8 was (r=) 68, test-retest reliability for 7th graders was .66, 12-15 year old group was .75. Constructvalidity with other measures of locus of control was found to be adequate.

2. Self-Concept:

We expected that the learning disabled students in S.T.E.P. who presumably have low opinions of themselves because of their successive scholastic and social failures, would reveal a more positive self feeling after participating in the program. The staff attempted to generate a warm and accepting atmosphere where students could feel comfortable about accepting themselves and developing self worth. Teaching other, younger students should also foster pride and positive self feelings.

Instrument:

The Piers-Harris Children's Self Concept Scale entitled "The Way I Feel About Myself" is an eighty item self report instrument. The following self catagories are tapped:

1. Behavior ("I can be trusted"),
2. Intellectual and school status ("I am dumb about most things"),
3. Physical appearance and attributes ("I am leader in games and sports"),
4. Anxiety ("I get nervous when the teacher calls on me"),

5. Popularity ("It is hard for me to make friends"),

6. Happiness and satisfaction ("I like being the way I am").

Extensive reliability and validity data is offered in The Manual For the Piers-Harris Children's Self-Concept Scale (1969).

3. Classroom and Home Behavior:

We hypothesized that not only would the S.T.E.P. students show psycho-social growth on pencil and paper tests, but that such growth would be manifested by a decrease of problem behavior in the classroom and at home. The learning disabled students were referred to S.T.E.P. not only because of academic deficits, but because they represented behavioral problems in the regular classroom. The tutors were trained to focus on modifying the students' behaviors as well as improving their academic skills. It was important to us that teachers and parents recognized decreased psycho-social malfunctioning since the basic aim of S.T.E.P. was to return the student to the regular classroom as soon as he was ready. Ultimately the student must adjust to his classroom and his social world.

Instrument:

Behavioral ratings were obtained from forms adopted from rating scales developed by Abbott Laboratories to evaluate school and home behaviors.

The "Teachers Questionnaire" asked teachers to rate on a four point scale from "not at all" to "very much" the degree of problem behavior they observed in each student. A sampling of the 25 items include:

1. Demands must be met immediately.

2. Acts "smart" (Impudent or sassy).

3. Overly sensitive to criticism.

4. Disturbs other children.

5. Quarrelsome

6. Appears to be easily led by other children.

7. Easily frustrated in efforts.

A second section asked the respondent to give an overall rating (Much Worse to Much Better) comparing the student to other children the same age.

The "Parents Questionnaire" asked parents to rate on the same four point scale the degree of observed problem behavior at home. A sample of the 48 items includes:

1. Problems with making or keeping friends.

2. Cries easily or often.

3. Carries a chip on his shoulder.

4. Tells lies or stories that are untrue.

5. Steals.

6. Feelings easily hurt.

7. Childish or immature. (Wants help he shouldn't need, clings, needs constant reassurance).

A second section asked the respondent to offer an overall rating (Much Worse to Much Better) of one's child compared to other children the same age.

Following a pre-post design, both rating scales were administered before and after each child participated in S.T.E.P.

4. Self Rating of Behaviors:

We expected that the S.T.E.P. student's own perception of his psycho-social functioning would change. He would see himself as less of a "problem" child. Thus, the students

were asked to judge their behavior on the same dimensions as the parents and teachers.

Instrument:

The 41 item untitled questionnaire asked the child to rate from "not at all" to "very much" the degree of the problem he was having at the time.

1. I am sassy to grown ups.
2. I have problems with making or keeping friends.
3. I carry a chip on my shoulder.
4. I tell lies or stories that are untrue.
5. My feelings are easily hurt.
6. I am childish or immature (want help I shouldn't need, cling, need constant reassurance).
7. I am overly sensitive to criticisms.

5. Personal Adjustment:

The S.T.E.P. students should [illegible] manifest mental well-being on a subconscious level af[illegible] S.T.E.P. involvement. Since the tutorial relation[illegible] viewed as "therapeutic value" to youngsters labled [illegible]stment problems, we expected positive personal growth.

Instrument:

The Fehrenbach Sentence Completion Form was used to tap personal adjustment in several areas.

1. How the student sees himself, how adequate he feels in dealing with life's situations and how well he can handle his emotions.

2. How he regards his own age group: whether he thinks people like him, trust him, and have included him in their plans and activities.

3. How he regards authority figures, parents, teachers, and community figures.

4. How he feels about school including reactions to tests, special subjects, report cards and activities.

5. How he reacts to frustration and failure: whether he becomes openly resistant and angry, sad, dependent, evasive, or withdrawn.

6. How he views the future: whether there have been plans made, whether these plans are realistic or unrealistic daydreams.

7. How he is able to communicate his ideas: whether he can express himself well, or whether he omits important words, gives highly personalized interpretations to others, misunderstands idioms, or does not have a sense of the relationship of sound to language symbols.

Twenty-five items found to be most efficient in discriminating students with serious problems from those with adequate adjustment patterns were scored blindly and independently by two professional raters - a clinical psychologist and a school psychologist. The student's name and date of examination was blocked out. (Following the Fehrenbach Manual instructions) Each rater independently judged each test item to determine whether it represented an adjusted response. The number of pre test adjustment responses was compared with post test adjustment responses. Theoretically, the adjustment score for each test could range from 0 to +25 for each rater. Interrater reliability was .45.

II. DESCRIPTION OF EVALUATION POPULATION

Twenty-five handicapped 7th and 8th grade students at the John Read Middle School in Redding, Connecticut were the target population of this study. There were chosen for the program based on the following handicapping conditions:

1. Social or emotional problems such as acting out or withdrawing.
2. Perceptual handicaps including poor visual, auditory or motor perception.
3. Physical handicaps, especially those in the visual, auditory or motor areas.
4. Low intellectual functioning.

Students were selected for the program on the basis of individual needs, the results of standardized tests, and the recommendation of each of the P.P.P.T. team members. Priority for admission was placed upon those students who seemed least able to function in an already existing special help or classroom situation; however, the scope of the program was not assumed to cover students known to exhibit behavior which was physically dangerous to themselves or to others.

III. EVALUATION PROCESS AND SEQUENCE

A pre-post treatment experimental design was utilized to evaluate to what degree the above objectives were met. Most of the students were pre-tested the week of October 7, 1974 and post-tested the week of May 19, 1975. Some entered in February and were tested then. The academic and personality measures were administered in three sections in small groups of five to eight students supervised by the school psychologist on the S.T.E.P. staff. The parent and teacher questionnaires were administered at approximately the same time.

Whenever possible, control group data was evaluated as a base line for comparative growth without S.T.E.P. involvement. The control group, which matched the S.T.E.P. group in grade level, was

chosen by the school guidance counsellor not attached to the S.T.E.P. program. This group represented students that were involved in other remedial experiences but not warranting S.T.E.P. referral. Generally they were described as having less severe behavorial problems. For example, according to the school disciplinary records, the 32 total S.T.E.P. pupils had an average of 1.75 disciplinary infractions (fist fights, truancy, disrupting class) whereas the 37 control subjects were disciplined an average of .83 times during the same period. Academic achievement scores (Stanford Achievements Tests) and intellectual ability scores (Otis-Lennon Mental Ability Tests) from the annual testing program were analyzed for both experimental and control groups. These tests were administered April 1974 and April 1975. School grades for S.T.E.P. subjects before and after the program involvement were compared with grades for the control subjects during the same time period.

IV. PRESENTATION OF RESULTS

Unless othewise stated, a repeated measures t-test for dependent means was performed on the pre-post data. Since the hypotheses predicted effects in specific directions, one-tailed tests of significance for the t values were calculated.

A. Academic Remediation

1. Academic Achievement:

S.T.E.P. subject scores on the Stanford Achievement Test for vocabulary showed statistically significant improvement before (6.0 grade level) to after (6.9 grade level)the program ($t=3.72, df=23, p<.005$). This represents an increase of .9 grade level, which is more than would be expected by normal growth for the intervening period between testing which was $7\frac{1}{2}$ months. Also about one-third of the students were in the program only $3\frac{1}{2}$ months when they were retested.

The students' scores on the S.A.T. math application also indicated statistically significant gains from pre (6.3 grade level) to post (6.2) testing ($t=2.06, df=24, p<.05$). This also

represents a .9 grade level improvement much better than expected by normal growth and maturity. In this case, as with the vocabulary test, S.T.E.P. students' initial grade level was markedly below expected for 7th and 8th graders. For students who could not keep up with their regular class, S.T.E.P. provided an educational atmosphere where the student was able to maintain and surpass normal academic growth patterns.

Scores from the regular school testing program were also analyzed. This time a control group not requiring S.T.E.P. remediation was included in the analysis. Results showed that the S.T.E.P. students did equally well in all subject areas tested; there were no differences in their relative progress (total reading $F=.03$,ns; total math $F=.012$,ns). The S.T.E.P. students showed equivalent gains despite psycho-social and academic handicaps. The S.T.E.P. students' intially lower achievement level was reflected in their S.A.T. scores in 1974 which were equivalent to 6.5 and 6.4 grade levels respectively for total reading and total math. By comparison the control group grade levels were 7.0 and 6.7.

2. Intellectual Ability:

S.T.E.P. students showed significant differences by their Otis-Lennon Test scores before (mean DIQ=84.9) and after (mean DIQ=90.4) participating in S.T.E.P. ($t=2.06, df=23, p<.025$). The intially low average DIQ of 84.3 for the S.T.E.P. group reflects a marked intellectual handicap of these students. Approximately 80% of their classmates will obtain deviation I.Q. above this score. This compares with an initial mean DIQ of 95.8 for the control group. Despite their initially lower I.Q.s however, the S.T.E.P. pupils improved their intellectual abilities more than the controls. Their 3.5 to 7.5 month gain of 5.48 was greater than the 3.1 point gain over 12 months for the control group.

3. Word Expression:

Pre-post scores on the Myklebust for the total word index was not statistically significant. Interrater reliability for the concrete-abstract dimension was $r=.85$ for the pre-test and $r=.80$ for the post-test. However, the scores on the concrete-abstract dimension were statistically significant ($t=3.15, df=16, p<.005$). This indicates a movement forward in abstract expression after participation in S.T.E.P.

4. School Grades:

S.T.E.P. students did better gradewise during their involvement in S.T.E.P. than the control subjects during the same time period. In English their average grade was C+ while the control grade was C ($t=1.89, df=61, p<.05$). In Science, S.T.E.P. pupils received an average grade of C while the control pupils received an average grade of C- ($t=1.68, df=59, p<.05$). In Social Studies, the S.T.E.P. pupils' average grade was C while the control subjects average grade was C- ($t=1.68, df=62, p<.06$). Although math grades were similarly different, they were not significantly so. These findings cannot be attributed to any differential grades before S.T.E.P. There were no initial statistical differences in grades between S.T.E.P. and control pupils in the three subject areas(English $t=1.20$, ns; Science $t=1.09$, ns; Social Studies $t=1.22$, ns). The average grade for the three areas for both S.T.E.P. and control groups before the 1974-75 period of S.T.E.P. involvement was approximately C.

B. Psycho-social Growth

1. Locus of Control:

S.T.E.P. students indicated more internal locus of control after their involvement in the program then before ($t=1.96, df=26, p<.05$). Thus the S.T.E.P. student changed toward the attitude that he can affect his destiny, that good fortune depends to some degree on one's positive actions, not just on fate or luck.

2. Self-concept:

The subjects did not show more positive self feelings. They actually revealed less favorable attitudes toward themselves after their involvement in S.T.E.P. ($t=2.57, df=26, p<.01$). At first glance, this seems to contradict a basic objective of S.T.E.P. However, Piers and Harris in their manual state that it is more reasonable to interpret the self reports on their scale as statements of the subjects' public self-concept rather than as a statement

of their typical behavior or their private self feelings. From a phenomenological viewpoint, the self ratings might better be interpretated as the self the subject wishes to reveal to others (Cronbach, 1960). The findings can be analyzed as reflecting a more honest public appraisal of self. This would be congruent with S.T.E.P.'s philosophy of generating an accepting atmosphere for personal and academic development where students are not rejected for their personal or academic deficits. Therefore, one way of interpreting the finding is that the S.T.E.P. students felt more comfortable about revealing negative aspects of themselves after having been involved in S.T.E.P. for awhile. They no longer revealed what they thought the staff wanted to hear about their personal feelings but rather how they actually felt about themselves.

A post hoc analysis of the response patterns on the Children's Self-Concept Scale revealed that subjects showed less tendency to see themselves in absolute black and white terms in the post testing. Although the students were asked to answer either "true" or "false", there were significantly more qualifying answers in the post-test (mean=8.48) then in the pre-test (mean=3.25). Qualified answers were defined as those responses in which the student either circled both "true" and "false" for a particular item or, instead of circling an answer, gave a qualifing statement. These results are statistically significant ($t=3.65$, $df=26$, $p<.005$). It seems that the S.T.E.P. students showed less tendency to reveal a self in absolute terms; rather they tried to make finer distinctions about their self feelings - a much more mature view then seeing oneself in global, undifferentiated dimensions. We can then conclude that after their involvement in S.T.E.P., the students felt more comfortable about revealing more negative aspects about themselves as well as began viewing themselves in more conditional, relative and differentiated terms.

3. Classroom and Home Behaviors:

Teachers revealed less behavior deficits in the S.T.E.P. students in post-testing, although these changes were non-significant. However, in their global judgements comparing the

S.T.E.P. students to their classroom peers, the teachers found that the S.T.E.P. students behaved "better" when compared to their classmates after their participation in S.T.E.P. then before ($t=4.85, df=15, p<.001$).

The parents did observe significantly less behavior deficits in their children after S.T.E.P. involvement then before ($t=2.09, df=18, p<.03$). Comparing their children to others their age in the same time period, the parents also judged their children's general behavior to be significantly improved after S.T.E.P. ($t=5.78, df=18, p<.001$). Thus in the classroom and in the home, the subjects showed less problem behavior and their general psycho-social functioning improved after being involved in S.T.E.P. when they were compared to their peers during the same time period.

4. Self-Ratings of School and Home Behavior:

Not only did significant others see improvement in behavior, but the S.T.E.P. students themselves rated their problem behavior less severe after they were involved in S.T.E.P. then before ($t=1.92, df=25, p<.05$). The S.T.E.P. students judged their own psycho-social functioning as improved.

5. Personal Adjustment:

The pupils responses to the sentence completion projective test, although showing greater personal adjustment on post-testing, was not statistically significant when both raters combined their scores. Interrater reliability was low ($r=.45$). The ratings for the more experienced judge did show significant differences, however, ($t=1.85, df=26, p<.05$) the rater judged the responses to projective material as showing more personal adjustment after the subject became involved in S.T.E.P.

V. ANALYSIS AND CONCLUSIONS

The basic aim of the S.T.E.P. program, encouraging students with learning and behavioral problems to design learning tools for teaching younger students, follows established educational and psychological theory. Teaching others is an excellent vehicle to learn basic concepts oneself. By teaching concepts in which he is deficient, the disabled adolescent fills gaps in his own knowledge - an excellent remediation device. Senior citizen aides are incorporated to provide

a one-to-one relationship that aims to generate an accepting and warm learning atmosphere. The"grandparent - granchild" relationship also promotes understanding between two generations that unfortunately seldom interact in contemporary society.

Is S.T.E.P. meeting its objectives? Research findings suggest that S.T.E.P. pupils indeed increase their academic knowledge and skills after participating in the program. Differences in pre and post scores on standardized achievement tests (S.A.T.) indicate significant improvement. The S.T.E.P. pupils were able to maintain and exceed the academic growth expected if they were normal students. Since they were referred to the program because of their inability to keep up in regular class, simply maintaining expected academic growth is important compared to a control group not as severly impaired academically or behaviorally. S.T.E.P. students did equally well on their total math and total reading achievement scores. S.T.E.P. also had a positive effect on increasing the mental ability of the students. As a group they grew from a functioning range indicative of the low average intelligence to the average intelligence range. Their 3.5 to 7.5 month I.Q. gain of 5.48 points was more then the 3.1 point gain over 12 months for the control group. In addition, S.T.E.P. students received higher English, Science, and Social Studies grades from their teachers during their year in S.T.E.P. than did the control subjects during the same year. These results are not due to any initial differences in grades before the evaluation period. Both S.T.E.P. and the control group had the same C average.

Psycho-social growth was also an aim of S.T.E.P. The tutors were trained to generate a warm, nurturing relationship that focused on modifying the students behaviors, attitudes, and sense of responsibility. Research findings suggest that S.T.E.P. indeed had an effect on the students' personal development. After participating in S.T.E.P., the pupils had a more internal orientation to life. They believed that they had some control over their destinies, such as the grades they received and the friends they made. Not only does such an internal locus of control favorably affect school achievement, but also is an important aspect of positive mental health. We expected that the students would reveal more favorable self-concepts; instead, they disclosed less favorable ones. This finding can either be interpreted as indicative of a lower self esteem or a more realistic appraisel of one's public self. We tend to believe that, as a result of the accepting atmosphere, the students became less defensive and more accepting of themselves. They were more willing to share their negative self feelings with us rather than offer responses they thought we wanted to hear. This conclusion is partially supported by the findings that they showed significantly less defensiveness on their responses to projective material during post testing. The pupils did qualify their post-test answers to a greater extent than their pre-test answers. Rather than seeing themselves in absolutistic terms, the pupils began making finer discriminations about their self feelings. For example, rather than admitting they"behaved badly at home"all the time,the pupils realized such a statement is conditional upon circumstances,

such as one's mood or the events provoking such behavior. The S.T.E.P. subjects responses to projective material showed greater personal adjustment after their participation in the program than before according to one of the raters. The students felt more adequate in coping with life's situations, regarded themselves more acceptable to their peers, regarded authority figures more favorably, felt more positive about school, reacted more maturely and less defensively to frustration and viewed their futures more optimistically. These results are tentative because only one of the two raters judged significant improvement. The S.T.E.P. students showed positive changes in their overt behavior as judged by significant others. Teachers and parents rated students better behaved after S.T.E.P. than before when comparing them to age mates during the same time period. Parents also observed less severe behavioral deficits in their children at the end of the year than in the beginning. Finally, the children themselves rated their problem behavior as significantly less severe after S.T.E.P. Although they saw their behavior improved, these positive changes were not yet reflected in a more positive self-esteem. Self-concepts change more slowly than overt behavior.

What kind of learning disabled student benefits most from S.T.E.P.?
In any intervention program, some participants are favorably affected a great deal while others do not show obvious gains. This is especially true for a project like S.T.E.P. which does not "pre-select" its participants; rather for many students this is a "last resort" since other interventions have been unsuccessful. Positive results may not always show up as statistically significant results. Keeping a pupil in his school and community may represent a remarkable achievement in itself. An overview of the data does not reveal any apparent trend in terms of test scores. Some students with relatively high I.Q.s did well while others with moderate and low intellectual levels benefitted markedly from S.T.E.P. No personality measure seems to have any greater prediction value then any other. Pinpointing definite academic and personality variables that predict success in S.T.E.P. should be the aim of future research endeavors.

Observing the students and tutors in action provided useful information in identifying those pupils who seem to function best in S.T.E.P. I have observed quiet, withdrawn, and seemingly

unmotivated students become excited and curious about learning. I have seen students reported to be mild to moderate behavior problems sitting calmly with a senior aide thoroughly absorbed in their project. From my observations, it seems that youths requiring a low keyed one-to-one relationship benefit most from S.T.E.P. S.T.E.P. seems to fulfill some of the emotional needs of learning disabled students whose special needs may be overlooked in a large traditional classroom. The teacher, understandably, cannot always provide the constant individual attention and flexibility some of these students need for educational and psychological growth which can be provided by the surrogate grandparents.

In sum, students involved in S.T.E.P. showed significant gains in their academic and psycho-social development. Academically, S.T.E.P. students progressed equally well or better than control subjects who were initially more intelligent and had a higher base line of academic competence. Psycho-socially the students showed favorable changes on important attitudinal and behavioral dimensions indicative of positive mental health. The research findings demonstrate that program objectives have been met.

The S.T.E.P. pupil had "failed" in the regular classroom situation. His learning disabilities and concomitant psycho-social problems made adjustment to his regular classroom difficult. The research evidence suggests that the unique features of S.T.E.P. provide an atomosphere conducive to academic and psychological growth for this type of student. Employing senior citizens as tutors in a school has many inherent advantages for this neglected segment of the population as well, not the least of which is the sense of worth in helping others in a meaningful way. In a sense, both the learning disabled pupil and the senior citizen has been rejected by society. Working together, they seem to provide a mutually beneficial relationship.

There were many positive effects of the program both to the individuals involved and the school as a system which could not be measured statistically. For example, anecdotal data that was collected throughout the program offered rather perceptive perspective to the statistical findings.

The tutors, in describing their relationships with the students, wrote the following:

--"She expressed the hope that she could come to S.T.E.P. every day as she enjoys it so much."

--"Some appeared shy and withdrawn at the onset, but have... suggested projects and have followed through with the aid of tutors - I especially believe that they are able to communicate with us much more freely than before."

--"The timid and reserved children seem to have expanded -- after a few weeks, they all come up with creative and usable ideas -- on the other hand, a few of the more aggressive children seem to have simmered down a bit."

--"Was gratified and pleased to see the improving behavior, skills and accomplishments of some of the students, who had been given up as innattentive at best, disruptive and hopeless at worst."

--"One young man was considered the bane of the school, and was almost unteachable and uncontrollable. His interest in plants and growing was discovered, and the beginning has been made in having him construct apparatus for procreating and possible landscape designing. He has begun to calm down to some degree and we hope to make him reasonably amenable in the near future."

--"When this young lady first entered the program, she was always bored, was distrustful, hostile, belligerent; she refused to talk to anybody, not even saying hello. She could not be induced to do anything or become interested in any subject or activity.

--"It took almost six months of careful treatment, of showing interest in her welfare, of no pressure to perform, of showing that there were people who cared about her and didn't want anything from her to change her attitude. The change was slow at first but so dramatic that her whole personality seems different. She is now a pleasant, relaxed, outgoing girl; she greets everyone profusely, offers little personal services to tutors, and likes to spend all her spare time with them. She has returned to many of her classes, and tells us that she has received some awards."

--"When I started working with this student, he had a very short attention span. He was very impulsive, plunging into suggested work without thinking or planning. He said he had a "good eye" in judging lines and spacing, and always finding out too late that he had misjudged -- I patiently showed him how to use a ruler, how to carefully measure distances, and he soon learned to take pride in his work. All the time I have been working with him, I was surprised to learn from him, I had been smiling and pleasant. When he asked me why I was always smiling, I asked him whether he would rather have me frown. Of course, he said, 'No,' and further questioning revealed that he never saw his father and mother smile. He said my smiling makes him happy and he feels good. We have an excellent relationship with very few difficulties. He says he prefers to work with me and his work has improved tremendously."

The children's own remarks indicate that they have grown socially and emotionally, and have developed a positive feeling towards school, the tutors, and the program:

--"I learned to tutor students and I learned how to be nice to them. I think (my girlfriend) learned a lot of things she didn't know".

--"I think it should continue because it helps the kids out that have problems in other classes get their mind on work and it kinda cools you down because sometimes you get sick of Science, English and sometimes I don't like some classes."

--"I like S.T.E.P. because they help you a lot in whatever you are behind in ...But there's one problem they're always short on pencils".

--"I like it because there are not 90 people there when you are and you get your work and other stuff done".

--"Writing the instructions to games helps you spell bigger words".

--"Once I came to S.T.E.P. -- (I didn't really feel so hot about school), but as it went along I thought it was a little better -- I used to get into trouble all the time around 6th grade and all. Now since S.T.E.P. is here I think I am learning more."

--"I like the S.T.E.P. program because the people are always really nice and you can learn things, real good. I myself am working on a game about the Presidents and I am learning more about American History then I ever would in Social Studies. One thing I like is that if you do something good the people encourage you to do more of it. She has a points system, that is if you work hard for a week you get a soda or an ice cream. The only things I do not like about it is that people (tutors) aren't strict enough sometimes (my tutor) is pretty strict and I get alot done. I am in a bad mood sometimes and (she) does not make me do anything hard".

--"You know what it is -- you don't learn as much in the big classes. Everyone is fooling around or the teacher's helping someone else or if you don't understand it -- if she is explaining something to the class, but some other kids do understand it, she won't stop it and explain it to you. The other kids want to go on and you don't learn, and that's why when they (the S.T.E.P. tutors) teach us something you are by yourself -- with a couple of kids and you learn."

Comments written by parents when filling out their rating forms confirms the children's improved behavior, academically and psychosocially.

--"My other children have a lot of trouble in school. L. has started to help her little sister and her sister is doing better now."

--"There has been a definite change. She plans her work much better. Before the program she used to leave work 'til last minute."

--"In previous years she did not like school. She complained of headaches."

--"He walks to school and leaves home before he has to because he likes school so much and is making good progress."

--"I'm very well pleased with what he's doing."

--"I feel this program has done wonders for N. His study habits have improved 100%...He is still fearful of any new situation, places or people, but I feel he is becoming more self assured and has a little more confidence in himself."

--"Mr. C. was so pleased that he has offered his services (a photographer and writer of reknown) to do a picture story gratis for any purpose we would like..."

--"Know J is an underachiever; am truly pleased that S.T.E.P. is giving him an opportunity to express himself creatively."

--"...her math was poor -- it's better; got B- (first time she ever got a decent mark in math)."

--"I think it opened him up some and talking and working with adults is helpful. I can't pinpoint it, but I do see changes. Maybe he's maturing. He's interested in other things now and is better about his paper route. Now he's a good mixer and is able to relate to other children better."

--"I am very pleased with the S.T.E.P program. I feel it has done the most for R. in all her school years. She does not feel she is stupid or needs to be taken out of or put in a special class. She feels she is doing something special and has gone from having a very low self-image to a higher one which is the best thing that could happen to her."

The teachers were also encouraged to add comments to their rating forms. A few remarks were:

--"more organized, more motivated, and has a less introverted attitude."

--"he is doing brilliantly now (in Social Studies)."

--"not as drastically introverted as before and interacts more with kids."

--"has grown immeasurably this year. S.T.E.P. and peer recognition have played a major role..."

--"M needs to assert herself and find community acceptance. I think S.T.E.P. is the place for her."

Although the report does not focus on this aspect, S.T.E.P. also enhances the mental well-being of the tutors. When a person helps another in need, as do the senior tutors, the helper also benefits from the relationship. A few excerpts from tutors' reports explain why.

--"it is surprising what this tutoring of 7th and 8th graders opens up a wider field or knowledge that has lain dormant for years. Thus you feel more alive and I hope useful in being helpful to others.

Now unconsciously I am interested in and read all articles I came across on children and teachers, also I am making real use of my dictionary. A new pupil is a challenge. What can we do to help him reach his goal in life - if he has never given it any thought, and many have not, your questions may arouse his interest and attention which is vital in teaching the young."

--"Did I enjoy it and think it was worth doing? Of course. At my age, insofar as possible, I do only what I enjoy doing. This means the bed may not get made between changes of linen and I may not eat dinner until 10 p.m., but who cares? Not me."

--"I find the S.T.E.P. program beneficial for myself and pupils. I have met a nice group of contemporary senior citizens. I am receiving an education in handling various types of hyperactive boys and girls and directing their activities into new schools of skills or thought. We are making various products for use in school activities which are too expensive to purchase commercially."

There were many subtle results pointing to the program success. The adolescents participating in the program have acquired knowledge in specific subject areas such as mathematics, language arts, reading, social studies and science for which they have produced

their learning materials (in which areas, they, too, have been deficient). They have also improved their skills in perception, through measuring, cutting and drawing, and through estimating how much raw material (paper, cardboard, paste, etc.) to use. They have increased their abilities in language through writing, taping and spelling words, and through punctuating, structuring and sequencing sentences for books, and for game and equipment directions. In building classroom furniture and equipment, the adolescents have learned meaningful mathematics and have received an introduction to trades such as drafting, mechanics, carpentry and woodworking. In "printing" their books, they have acquired typing and bookbinding skills.

Further, they have been shown how to develop and organize their ideas into valuable and viable learning materials, and thus have learned to plan, execute and complete a task. Many, especially those who are verbally limited, have learned that they can now express themselves in a uniquely personal and gratifying way, through their own creative talents.

Many disabled learners who entered the program had been rejected by their teachers, peers, parents and other adults because they were unaware of appropriate behavior in social situations. They came to Project S.T.E.P. as a last resort, their final opportunity before outplacement in a special facility. Through S.T.E.P. such students have been given opportunities of learning to listen and speak better with adults as well as with each other; with burdens of grades and traditional learning removed from their school situation, they have found the time and the supportive social environment they have needed for relating to others; almost overnight they have begun to talk about their feelings, share their ideas, discover their identities.

For many adolescent S.T.E.P. participants, so great has been their growth in self-confidence and skills through this alternative educational experience, that it has led them to seek out the mainstream which they had heretofore rejected. After several months in S.T.E.P., many youngsters have begun to abandon the materials making approach, and instead have asked tutors for assistance in composing research papers, completing homework assignments, studying for tests. Some students, after they have been in S.T.E.P. for many months, have asked the program coordinator that they be allowed to attend the program during elective periods only, so that they do

not miss their academic classes, or that they be removed from S.T.E.P. entirely so that they can function on their own. For all, their decisions to return to the mainstream completely or in part, have proved to be profitable, for these adolescents have now begun to cope with classwork more adequately than ever before.

The senior citizen tutors have found meaningful relationships with the students and with each other. They have made new (and sometimes their only) friends; they have discovered the rewards of helping a youngster, of operating as part of a school, and of being needed and appreciated. Previously, their only service to schools had been as voluntary "grannies" for younger children. Project S.T.E.P. has made their work both renumerative, by offering them an attractive salary, and challenging, by asking them to help youngsters for whom learning, and even relating to others, had seemed only unpalatable chores.

The tutors have found themselves no longer representative to the students, to the community, to themselves, of the term, "the old ways" which has often been used to characterize the style of their generation, but have become innovators and pioneers of a new environment for learning. They have developed an environment based on interpersonal relationships of trust, of sharing, of creating, which only they with their wisdom and patience, and their gift of time, can offer.

Classroom teachers at both middle and elementary levels have benefitted significantly from Project S.T.E.P. Middle school teachers have found that they now can teach and relate to the S.T.E.P. adolescents more readily; through their experience in S.T.E.P. these students have developed skills which they can apply to their classwork, and have begun to feel less frustration in their classrooms, since they no longer have to spend their entire school day within these settings. Furthermore, the teachers have been relieved entirely of those students with learning problems who entered S.T.E.P., because their disruptive or withdrawn behavior had interfered with attention required by others in the class. Using senior citizens rather than parents as aides to the disabled learner has been appealing to teachers, as they have tended to feel that the elderly, due to their age, are not likely to replace professional staff, nor are they critical of schools and teachers because they lack the vested interest that parents have in them.

Educational materials have been in short supply due to rising costs and diminishing school budgets, but through Project S.T.E.P., many unique materials have been made available to elementary teachers and their students at no charge. When requesting materials, teachers have been encouraged to submit descriptions of the strengths and weaknesses of specific children in their classrooms, so that personalized materials may be developed for these youngsters. Through Project S.T.E.P., elementary teachers have been able to better individualize their programs, and their students have been provided with motivating games, books, tapes, etc, suited to their needs. Parents of those who have been participating in the program have found that their children, now used to the freedom of expressing themselves and of being accepted for that expression, speak more openly at home. Parents have also reported that, because their children have discovered something new and different to which they can look forward each day, they now attend school more regularly, and seldom give excuses for not going to school. Furthermore, these parents have had to be called into school less frequently regarding academic or behavior problems of their children.

The Redding school system, as supporter of the program, has found that it has not needed to face the expense of hiring additional special education teachers to deal with learning handicapped students because the senior citizens can be utilized for this purpose. Indeed, the school system has acquired a source of people abundant and economical enough to provide one-to-one attention for special students, and to do so effectively. The system has also been able to use its already employed special personnel in training the senior citizens, and advising, supervising and supporting them in their work; in training classroom teachers to diagnose effectively when referring adolescents to the program, and when requesting learning materials for youngsters at the elementary level.

Through the work of Project S.T.E.P., the community and society have had less worry about the future placement of youngsters in the program whose academic and behavioral difficulties had marked them as potential drop-outs or possible deliquents. The project is pleased to report that the towns of Monroe and Middletown are adopting the program for 1975-76. For it is through such programs that society may begin to feel more positive about the remaining productivity of its older members, and the future capability of its younger ones. Perhaps what Project S.T.E.P. can best teach society is that much of its future lies in its past.

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